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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,493	05/16/2006	Hiroshi Omote	038685.57582US	1659
23911 7590 11/14/2008 CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300				
EXAMINER				
NGUYEN, TU MINH				
ART UNIT		PAPER NUMBER		
3748				
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11/14/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/579,493

Applicant(s)

OMOTE ET AL.

Examiner

TU M. NGUYEN

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1 and 4 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 16 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/5508)
Paper No(s)/Mail Date 20081003
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

1. An Applicant's Amendment filed on July 7, 2008 has been entered. Claims 2-3 have been canceled; and claim 4 has been amended. Overall, claims 1 and 4 are pending in this application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garner (U.S. Patent 3,491,534) in view of Roberts (U.S. Patent 3,457,904) and Elliott (U.S. Patent 2,165,360).**

Re claim 1, as shown in Figure 1, Garner discloses an exhaust manifold (A) for an internal combustion engine (E) (lines 20-27 of column 4) having multiple cylinders, characterized in that:

- the diameter (D) of a main tube of the exhaust manifold and the diameter (d) of a branch tube satisfy the expression of $1.2 \leq (D/d)^2 \leq 2.5$ (see lines 32-44 of column 5); and

- the diameter (D) (see lines 32-44 of column 5: $D = 2$ inches) of the main tube of the exhaust manifold and the diameter (D1) (from Figure 2, D1 exists between end of the distinct runner passages and the beginning of the collector passage, in the contour) of a passage of a connection connecting a branch tube to the main tube satisfy the expression of $0.7 \leq (D/D1)^2 \leq 1.4$ (because the runners are contoured to the diameter of the main passage, at some point in this contour the ratio of $(D/D1)^2$ must fall between the given ratios).

Garner, however, fails to specifically disclose that the diameter (d) of a branch tube of the exhaust manifold and the diameter (de) of an exhaust valve sheet satisfy the expression of $0.8 \leq (d/de)^2 \leq 1.2$; and that the internal combustion engine is supercharged.

As depicted in Figures 6 and 8, Roberts teaches an exhaust manifold (74) for an internal combustion engine (10) having multiple cylinders, characterized in that the diameter (D) of a branch tube (72) of the exhaust manifold and the diameter (d) of an exhaust valve sheet (68) satisfy the expression of $0.8 \leq (D/d)^2 \leq 1.2$. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the teaching by Roberts in the engine of Garner, since the use thereof would have been routinely practiced by those with ordinary skill in the art to improve engine performance (see Roberts: lines 10-24 of column 3).

Elliott discloses a supercharger system for motor vehicles (lines 1-6 of column 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the supercharger of Elliott in the engine of Garner, since the use thereof would have increased engine power (see Elliott: lines 28-32 of column 1).

Re claim 4, as taught by Roberts, the modified engine of Garner is characterized in that a branch tube (72) is smoothly connected to a main tube (74) of the exhaust manifold via a

connection, the radius R (L in Figure 8) of the outer peripheral side of the connection and the radius r (d in Figure 8) of the inner circumference side of the connection satisfy the expression of $1.7 \leq R/r \leq 2.1$ (see line 37 of column 8; $L = 2d$).

Response to Arguments

4. Applicant's arguments with respect to the references applied in the previous Office Action have been fully considered but they are moot in view of the new ground(s) of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office Action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Prior Art

6. The IDS (PTO-1449) filed on October 3, 2008 has been considered. An initialized copy is attached hereto.

Communication

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tu Nguyen whose telephone number is (571) 272-4862.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas E. Denion, can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TMN
November 10, 2008

/Tu M. Nguyen/
Tu M. Nguyen
Primary Examiner
Art Unit 3748